



UNITED STATES ENVIRONMENTAL PROTECTION  
AGENCY  
REGION 6  
HAZARDOUS WASTE ENFORCEMENT BRANCH  
1445 Ross Avenue  
Dallas, Texas 75202

June 21, 2010

**MEMORANDUM**

SUBJECT: Gulfco Marine Maintenance Superfund Site  
Condition of Storage Tanks and Former Impoundment Cap

FROM: M. Gary Miller, P.E. *[Signature]*  
Arkansas/Texas Section (6SF-RA)

TO: Carlos Sanchez, Chief  
Arkansas/Texas Section (6SF-RA)

*CAS 6/24/10*

On March 9, 2010, I performed an inspection of the above ground storage tanks and the cap over the former impoundments located at the Gulfco Marine Maintenance Superfund Site at 906 Marlin Avenue in Freeport, Brazoria County, Texas. Pictures of the tanks and cap are attached.

**Storage Tanks**

An above ground storage tank farm is located at the site south of Marlin Avenue. It consists of fourteen tanks of various sizes located within a concrete bermed area. In 2008, wind and/or storm surge resulting from Hurricane Ike removed a fifteenth tank. These tanks contain various hazardous substances including benzene, 1,2-dichloroethane, chloroform, heptachlor, tetrachloroethene, trichloroethene, and vinyl chloride. Corrosion was observed on the tanks which resulted in complete penetration of the metal in at least one case (Tank No. 2). The containment areas were approximately one-half full with water. Since 2003, there has been additional deterioration and corrosion of the tanks, including the tanks (Tank Nos. 2, 13, 18, and 21) that contain hazardous substances as identified below. Pictures of these four tanks taken in 2003 and 2010 are attached. This corrosion will continue as a result of the site's location near the coast, and will likely result in future releases as the tanks continue to deteriorate. In addition, the site's location within the 100-year floodplain and further tank deterioration make it likely that additional tanks could be washed away in future hurricanes.

Based on sampling results of the tank contents that was completed in December 2006, several of the tanks were found to contain hazardous substances, as follows:

- (a) Tank No. 2 (organic phase, TCLP data):
  - Chloroform (2.25 mg/L)



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- 1,2-Dichloroethane (8.4 mg/L)
- Trichloroethylene (1.52 mg/L)
- Vinyl Chloride (0.247 J mg/L)
- (b) Tank No. 13 (oily sludge, TCLP data)
  - Benzene (13.8 mg/L)
  - 1,2-Dichloroethane (2.73 J mg/L)
  - Tetrachloroethylene (47.7 mg/L)
  - Trichloroethylene (2.98 J mg/L)
- (c) Tank No. 18 (light organic phase, TCLP data)
  - Chloroform (216 mg/L)
  - Heptachlor (0.029 J mg/L)
- (d) Tank 21 (oily water, TCLP data)
  - Benzene (51.6 J mg/L)
  - Chloroform (2100 mg/L)
  - 1,2-Dichloroethane (224 mg/L)

*Note: J = estimated value for organics*

### **Cap Over Former Impoundments**

Wash waters from the cleaning of barges that contained organic chemicals, caustics, and waste oils were stored in the former surface impoundments. These impoundments were earthen pits with natural clay liners located at the site north of Marlin Avenue. They were closed in 1982 by removing the liquids and sludges except for about 100 cubic yards of sludge, which was mixed with soil and left in place. The impoundments were capped with approximately three-feet of clay and a hard-wearing (shell) surface. The shallow ground water below the former impoundments occurs at depths ranging from 5-feet to 15-feet. This shallow ground water contains a number of volatile organic compounds, including 1,1,1-trichloroethane, 1,1-dichloroethene, 1,2,3-trichloropropane, 1,2-dichloroethane, benzene, 1,2-dichloroethene, methylene chloride, tetrachloroethene, trichloroethene, and vinyl chloride.

The purpose of the clay cap is to prevent direct exposure to the underlying hazardous substances, and to restrict infiltration of rain water and migration of the hazardous substances in the shallow groundwater. The cap was observed to have ruts on the top, and was covered in some areas by woody shrubs reaching a height of approximately three to four feet. These ruts may erode to the point of exposure of the contaminated materials below the cap. In addition, the ruts and the roots from the woody shrubs will likely result in increased infiltration through the cap, and migration of the hazardous substances beneath the cap into shallow ground water, the surrounding soils, and surface waters.

If you have any questions regarding this, please contact me at 5-8318.

### **Attachments**

cc: Barbara Nann  
Rita Engblom



**GULFCO MARINE MAINTENANCE SUPERFUND SITE  
INSPECTION, MARCH 9, 2010**



**Tank #21 (foreground); Tank #15 (background)**



**Tank #15 (foreground); Tank # 21 (background)**



**GULFCO MARINE MAINTENANCE SUPERFUND SITE  
INSPECTION, MARCH 9, 2010**



**Tank # 14**



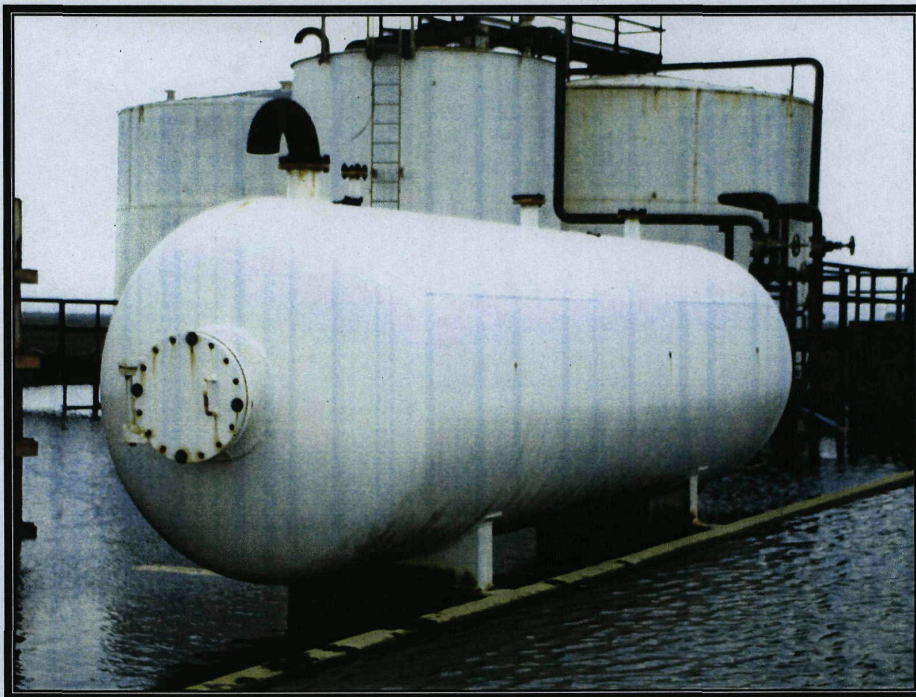
**Tank #6**



**GULFCO MARINE MAINTENANCE SUPERFUND SITE  
INSPECTION, MARCH 9, 2010**



**Tank #2**



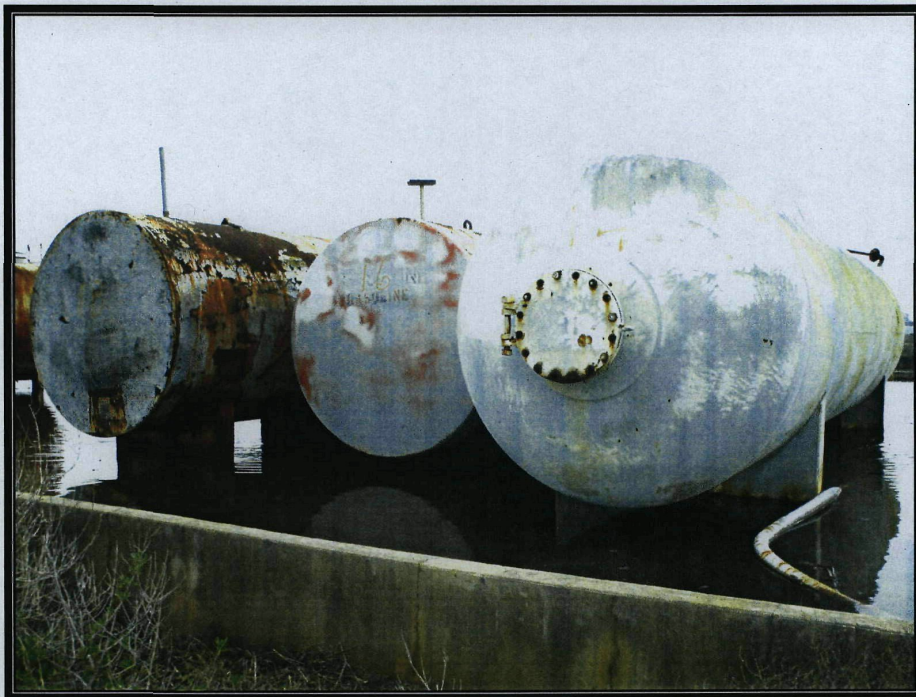
**Tank #4**



**GULFCO MARINE MAINTENANCE SUPERFUND SITE  
INSPECTION, MARCH 9, 2010**



**From Left to Right: Tank #14; Tank # 16; Tank # 13**



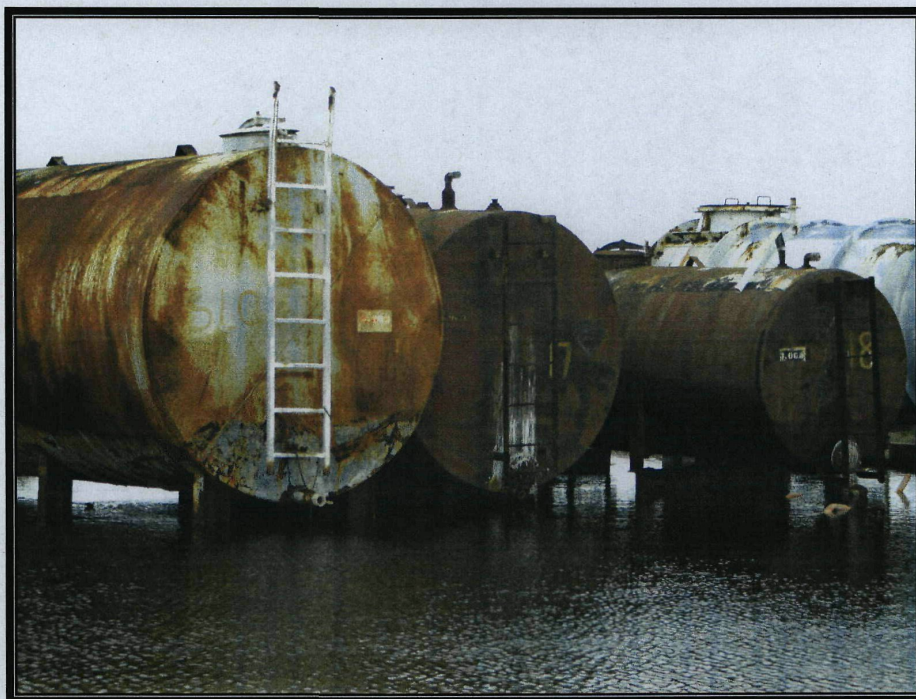
**From Left to Right: Tank #13; Tank # 16; Tank #14**



**GULFCO MARINE MAINTENANCE SUPERFUND SITE  
INSPECTION, MARCH 9, 2010**



**Tank #13**



**From Left to Right: Tank #22; Tank # 17; Tank # 18**



**GULFCO MARINE MAINTENANCE SUPERFUND SITE  
INSPECTION, MARCH 9, 2010**



**From Left to Right: Tank #22; Tank # 17; Tank # 18; Tank #10**



**From Left to Right: Tank #10; Tank # 18; Tank # 17; Tank #22**



**GULFCO MARINE MAINTENANCE SUPERFUND SITE  
INSPECTION, MARCH 9, 2010**



**Tank #23**



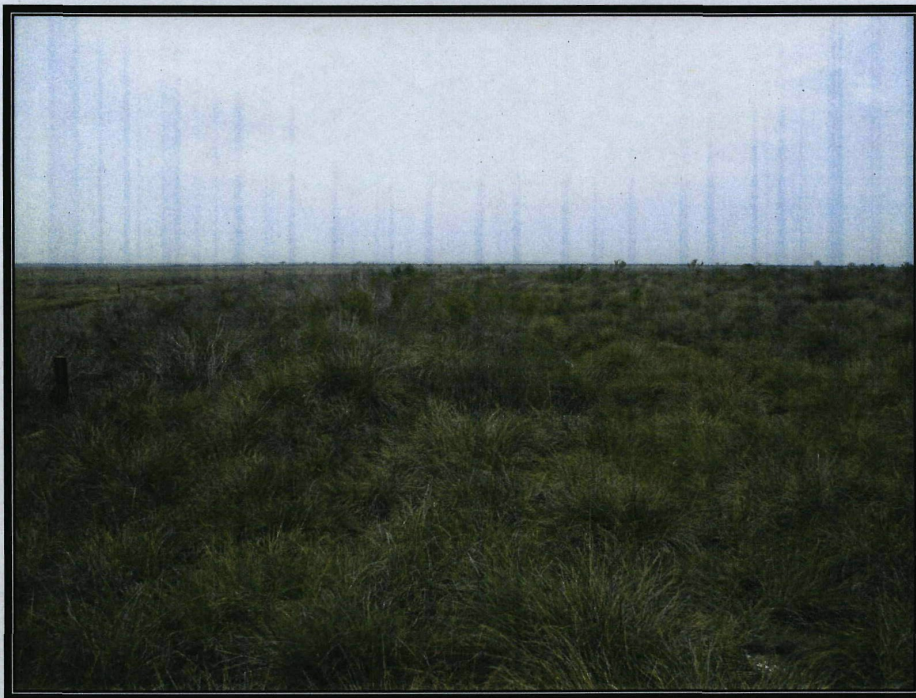
**Former Impoundment Cap: east corner, view northwest**



**GULFCO MARINE MAINTENANCE SUPERFUND SITE  
INSPECTION, MARCH 9, 2010**



**Former Impoundment Cap: east corner, view southwest**



**Former Impoundment Cap: south corner, view northwest**



**GULFCO MARINE MAINTENANCE SUPERFUND SITE  
INSPECTION, MARCH 9, 2010**



**Former Impoundment Cap: rut on top of west side of cap**



Gulfco Marine Maintenance Superfund Site  
Tank No. 2 (round tank)  
Top: May 2003; Bottom: March 2010





Gulfco Marine Maintenance Superfund Site  
Tank No. 13 (third from left)  
Top: May 2003; Bottom: March 2010





Gulfco Marine Maintenance Superfund Site  
Tank No. 18 (second from right)  
Top: May 2003; Bottom: March 2010





Gulfco Marine Maintenance Superfund Site  
Tank No. 21 (top: left; bottom: second from left)  
Top: May 2003; Bottom: March 2010

